

AN
ESSAY
UPON THE
Necessity and Excellency
OF
EDUCATION.

With an Account of Erecting the
Royal Mathematical Schole

Recommended
By His Royal Highness ;
Lord High Admiral of *England*, &c.

Upon a Report
From the Navy Board,

Declaring,
Amongst other Advantages to the Nation, the
Particular Services of Such a Foundation, to the
Royal Navy of *England*, in Its several Capacities.

By Mr MAIDWELL. (L)

Tantæ molis erat Navalem condere Gentem.

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YASSE

THE

Needham and Excelsior

EDUCATION

Recommended

By His Royal Highness;

British Museum



Amongst other Advantages to the Nation, the
Particular Sources of such a Foundation, to the
Royal Navy & Navy, in the several Capities.

SA 37-5141 D W BLT

James Smith and William Smith

...and sold by

TO THE
RIGHT HONORABLE
ROBERT HARLEY
ESQUIRE.

*Speaker of the Honorable House
of Commons.*

*One of the Principal Secretaries
of State.*

*And of Her Majesty's most
Honorable Privy Council.*

S I R,

I HOPE this Interruption may pra-
sume some Prætenſions of a *Pardon*,
after You have been pleas'd to conſider
the

DEDICATION:

the Prevailing Motives of my many Obligations.

To Whom ought this *Dedication* more Justly be apply'd, than to the Honorable Mr. Speaker, when the Essay is design'd a Dutiful Address of the Author's most *Humble Thanks* to the Honorable House of Commons for Favors lately received.

To Whom separatly can It be with greater Gratitude appropriated, than to Your Self. Who as a Noble Patriot Patronizes and Promotes the Good, and Great Work of Establishing, and Maintaining a *Public Schole* for the Better Instruction of Youth in the Art of *Navigation* so Beneficial to this Kingdom. And as You Encourag'd the *Benefactors* Undertaking in the *Last Session*, have also confirm'd his Perseverance by Assuring Him of your Hearty Endeavours in *This*, for its speedy Consummation.

Lastly, To Whom should this Copy of the Necessity and Excellency of Education be rather Consecrated, than to the Right Honorable Mr. Harley—

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DEDICATION.

One of the Best Originals. In Whom appears the Superiority of a *Mighty Genius* Elevated by an Advantageous Institution:

It is not always the Good Fortune of a *Dedicator* to chuse a Larg Open Field of Virtues, from whence He may collect most innocently the Natural Beautys of a *Just Encomium*. By which Security He can adorn Truth without Flattery, and not incur the Censure of being Nauseous, or Satyrical.

Sir, I am safe in both Capacities, for as You by *Intrinsic Worth* may despise and deterr Adulation, so I by the Integrity of my Mind shal ever decline the Practice. Al Men are Witnesses of my Honorable Thoughts, and Words, by the Success of your *Eminent Abilitys* and by *Consent* of Parliament. Providence in al Ages has selected, and inspir'd Agents for her Peculiar Administrations; and grants Extraordinary Qualifications In Particular, when She purposes Her Kind Protection in General. Such *First Starrs*, I reverence at Distance, because
I ad-

DEDICATION.

I admire their Brightness and with the
Public feel their Influence.

Since I had the Honor to inform You
of this Treatise, upon Reflection of
Your Singular Endowments, I soon re-
memberd the *Three Principal Ingredients*
which in *Aristotle*, and *Plutarchs* Op-
inion were esteem'd most necessary to
compound a *Perfect Man*. In You the
Triple League is Ratify'd. In You *Nature*,
Art, and *Exercitation* have made their
Complement. Such as You were Born for
the Fame, and Benefit of your Country.
Such as You were ordain'd to be Prais'd
in the Gates, and to Stand before Princes.

Experience declares It the Surest O-
men of a Prosperous Government, when
the Helm is steer'd by *Wise and Steady*
Statesmen. Which Blessing Heaven al-
lotted to Queen *Elizabeth* of Immortal
Memory, and now seems with the same
Benediction to Crown Our most Pious
and Accomplisht Queen. Thus *Florus*
said in his Time, that under the Excel-
lent Prince *Trajan*, *Rome* rows'd from
her Lethargy and shook of Old Age :
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DEDICATION.

So in this Auspicious Reign *England* renews its Youth. And as the Roman Senat in Prayers for their Emperors Felicity, wish'd him Happyer than *Augustus*, and Better than *Trajan* : So I offer up my United Additional Petition, that Queen *Ann* may Flourish Happyer, Better, and Longer than Queen *Elizabeth*.

To which End, may the Divine Assistance, that gives Counsel to Counsellors, and teaches Senators Wisdom, continue, as It hath begun, the Rewards of Her Piety.

Then Posterity shal with wonder peruse Her Annals, and veiw Her Majesty in a Circle of Transcendant Actions, like *Justice* holding her *Scales*, and *Sword* ; In one Hand the *Balance* of *Europe* ; In the Other the *Correction* of Oppressors. Then they wil Read of Her Critical, and Certain Deliverance of *Germany*, with the Most Illustrious Name of *Marlborough* in the First Rank of Hero's,

And as Glorious *Elizabeth* had a *Burleigh*, and a *Walsingham*, to manage the *Nerves* of War, and the *Mysterys* of State,

DEDICATION.

State. By Whose Skilful Conduct She was Enabled to vanquish, and delude Her Enimys : So We and our Children shal observe that Royal *Ann* fulfils Her Glory, by the Sagacity of *Her Godolphin*, and the Penetration of *Her Ha ley*.

Long may our Sovereign possess such Faithful *Friends*, and Useful *Ministers*, and long may They enjoy so Gracious a Mistress, to the Mutual Happyness of *Church*, and *State* ; which is the Perpetual Desire, and Oblation of,

Sir,

Your Most Obedient,

and most Devoted Servant,

L. Maidwell.

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THE P R E F A C E.

HORACE judiciously affirms that *Poetry* resembles *Painting*, to be view'd in its Mediocrity with a Transient Sight, and at distance: in its Excellency requiring a clearer *Light*, and a Nicer Observation. And *Poetry* by signifying *Composition* gives every *Writer* leave to use the same *Similitude*; for his Book ought to imitate a Picture, by being very like the Subject it pretends to draw, and by delineating the Essential Quality of a well-finish'd Face, to regard it's *Reader*, as the other looks directly upon it's *Spectator*.

Readers commonly are divided into the *Grave*, the *Learned* and the *Witty*. Thus a Discourse is jug'd the most Delicat, and creates the sharpest Appetit, which

The Preface.

which is season'd at once Agreeable to these several Palats; and as Manna to the *Israelites* is Sweet to All, that tast it.

How far this *Essay* bears up to this Character the *Author* dares not offer to justify, being at present Intended an *Epitome* of itself, the Miniature of exacter Proportions; rather the Index of the whole Work, and a fit Remembrance of his *Public Benefaction*, with the Encouraging *Resolutions*, and *Progress* of the Honorable House of Commons in the last Session of Parliament towards the Accomplishment of a *National Advantage*.

Wherefore in this Edition He only considers the Respects due to the *August Assembly*, and desires *Critics* of different Sizes, and Tempers, to be the more Favorable to the *Plane Preliminarys* of a Narrative; which expects Approbation not so much from Art, as Honesty, and the Duty of being neither too Long, nor too Short.

Here after It shal appear in Full Growth, and Manhood; in due Symmetry of all
Parts

The Preface.

Parts belonging to the various Circumstances of *Institution*, for the Satisfaction of *Parents*, and *Children*; likewise for the Honor of *Educators* by the Quicker Improvement and Ease of *Scholars* in their intolerable Fatigues of obtaining Two, or Three Dead Languages.

This *Treatise* for that Reason is digested into *Heads* capable of such Purposes, and Admonitions, and when it opens the *Distemper*, it shall propose the *Cure*; tho' now *Prima Facie* expressing solely the Obligations, and Beautys of *Education*, with the Success of applying the Natural Inclination; especially after the Custom of al Wise Governments in a Discipline most Expedient to the *Interest* of the *Constitution*,

We are assur'd of their Happyness, who by *Good-Works* have perform'd the End of their Creation, and in their Life, by distribution of Transitory Wealth have bin Supporters and Patrons of their Fellow-Creaturs.

But Thrice Blessed are Those Worthys, who have perpetuated the *Literature* of
Succed-

The Preface:

Succeeding Generations, and even after Death propagat a Learned and Virtuous Posterity by their Noble Charitys. Such were the Renown'd Founders of our Famous *Scholes*, and *Colleges*, who with the Old Patriarchs are to be esteemed the Fathers of our Tribes, and Familys, stil Breeding up our Youth to the last Period of Time for the Service of God, and their *Country*.

England excels other Nations in these Seminars of *Learning* and true *Religion*, as our most Celebrated Universitys, the Two Eyes of our *Grace* do sufficiently certify. We are no less Fortunat in the Præparatory, Rudiments of most Accurat Grammarians. ——— Theretore in Justification of this Truth, at *Harlem* Conversing with the Master of the Chief Schole, and reckon d amongst the most Considerable of the *Seven Provinces*, when He magnify'd Himself by saying *Fui Gronovij Discipulus*; The Author thought himself engag'd in Honor to retaliat *Ego Busbeij*: And upon his wonder of attracting no *English* to his Schole, where He taught the Young Gentry of *France*, *Denmark*, *Suedeland* and *Germany*, He again return'd

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return'd that We had no need of Foreign Education, since we enjoy'd it in so Great Perfection at Home.

Yet as we abound throughout the Kingdom with *Grammar Scholes* of Deserv'd Reputation, so we are perplex'd every where, with too many little *Parish Nurserys* of the *Latin Tongue*. Which as they are unskillfully manag'd in the Opinion of very Understanding Judges prove *Præjudicial* to the Common-wealth: Educating contrary to the Frame, and Profit of a *Trading People*, too many Poor Scholars; who without Abilitys, or means of an Occupation, are thrust into the World to get their Bread, and having lap'd Letters, as *Dogs* drink the *Waters* of the *Nile*, conceit themselves above the Employment of a Shop, and thence become the Scandalous Interlopers, and Quacks of Nobler Professions.

These *Petty Scholes* might be made Beneficial to the Commonalty, if they were circumscrib'd in proper limits, not to teach beyond *Correct Reading*, and *Fair Writing*, with *Arithmetic*, and some *Branches of Mathematics*; which Method

The Preface.

thod wou'd qualify them for most Trades,
and by Industrious Ingenuity advance
them to several Stations of Credit by
Land and Sea.

Which Prudent Consideration has
mov'd Diverse *Patriots* in late *En-
dowments* to signalize their Benevolence
after that manner. And whereas an Am-
bitious and Powerful Monarch has pro-
moted the Grandeur of *France* by Found-
ing such *Mathematical Scholes* in his
Sea-Port's, for the Supply of his *Navy*,
by the Increase of Skilful *Navigators*:
It is from Experience of his Success the
Indispensible Concern of *England* vigo-
rously to prosecute this most Necessary
Example.

King *Charles* the 2^d. amongst other Ad-
mirable Qualifications had no small Com-
prehension of *Navigation*, and delight-
ing in that Art, for the Service of his
Fleet, added a Mathematic Schole
to *Christ-Church-Hospital*. Nevertheless
the Design *ab Origine* was too *Low*, and
too *Narrow*, scarce Teaching al the
Virtues and Offices of a Good Pilot, or
Master of a Vessel. But

The Preface.

But had that Prince bin pleased to have Founded a *Separat Royal-Schole* for the Free Maintenance, and Education of a certain Number of *Gentlemen's Sons*, in a more Useful Polit and Comprehensive Degree of *Naval Knowledge*, and Instruction, than has bin hitherto attempted; also that the *Marine Arts and Sciences* might have been taught in the *Languages*, as in the Scheme hereafter mentioned; in order for Fitting them for the *Sea-Service*, or other *Public Affairs* belonging to the Same; He Had then out Rival'd his Neighbour's Praten-sions, and far beyond a Mausolæum of Brats, and Marble, extended a *Living Monument* of Himself round the *Globe*, to the Assistance of the Best Familys, and the perpetual Advantage of *England*.

This is a *Work* truly *National* and *Glorious*, upon whose *Infallible Basis*, Our *Nation* may, and must fix its Riches and Security. And this is the Sincere Intention of these Papers, that *Such a Schole*, for the Encouragement of the like Foundations, may be Erected, and Maintain'd according to the Resolutions,
and

The Preface

and Progress of the Honorable House of Commons; by Virtu of the *Author's Charter, Benefaction*, and other *Finishing Proposals* without Public Charge, or Præjudice whatsoever. And as *Schola Senatus Populiq; Anglicani*, be Confirm'd by Authority of *Queen, Lords, and Commons*, Assembled in Parliament.

Moreover *This Establishment* in Probability, from Public and Privat Affections, may procure Royal Favor, and the Generous Aid of Noble Coadjutors; yet whilst those Prosperous Events, ripen under the Influence of Providence; the Author as becomes him, Submitting the *Great, and Good Work* to serious Examination and calling to mind the Sarcaſm of *Diogenes* to the *Myndians* forth with to shut up, least their Little Town should run out at their Great Gates; takes the hint and concludes his *Preface* with these *Three Advertisements*.

To invite *Patrons*, and *Benefactors*, no Words can be more charming than these of *Cicero*. That Great Fortune can do nothing Greater, nor Good Nature
Better

The Preface

*Better, than to do Good to as Many as
tis possible.*

To provoke the speedy Consummation of this Universal Benefit, no Advice can be more Emphatical to Englishmen than the Expression of *Zenophon* in his *Athenian Republic*. That the *Athenians* were defective in one Circumstance, for if they had bin *Islanders*, and Lords at *Sea*, it were in their Power if they pleas'd to have commanded and insulted others, without detriment to themselves : As long as they maintain'd the Authority of a *Fleet*.

Lastly. To give the *Author* a sure Complacency in his mind, that his *Endeavors* are altogether in the Right, the Concurrence of that Eminent Statesman *Georg* late *Marquesss Halifax*, is very prevalent. Who—*In His new Model at Sea*—exactly Squares with his Wishes, and Propositions; In these his Sentiments.

That if *Allegiance* is due to *Protection*, Ours to the *Sea* is due from that Rule. Since by that, and by that alone we are
pro-

The Preface.

protected ; and if we have of late suffer'd Usurpation of other Methods contrary to the Homage we owe to that, which must preserve us : It is time now to restore the *Sea* to its Right, and as there is no Repentance without Amendment : So there is not a Moment to be lost in their going about it.

That to Secure our Monarchy, we ought to breed the *Sons* of *Gentlemen* capable of Commands at *Sea*, and *Naval* Employments, and to expect that *Quality* alone should waft Men up into Places, and *Employments*, is as unreasonable, as to think that a Ship, because it is carv'd, and guilded, should be fit to go to *Sea* without *Sails* or *Tackling*. But when a *Gentleman* makes no other use of his *Quality*, than to incite him the more to his *Duty*, it wil give such a True, and Settled *Superiority*, as must destroy al Competition, from those that are below them.



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A Copy of the Report
FROM THE
NAVY BOARD
TO HIS
Royal Highness,

Lord High Admiral of *England*, &c.

In Commendation of Mr *Maidwell's* Design ;

With the Prince's Approbation of the Same.

To *George Clark*, Esq; One of the Secretaries
to His Royal Highness.

S I R,

IN Obedience to the Com-
mands of His Royal High-
ness, signify'd in your Let-
ter of the 23d instant, upon the
Petition of *Lewis Maidwell*, Esq;
relating to the Erecting of a Royal
Mathematical Schole, for the
Maintenance and Education of
Youth

Youth in the Art of Navigation ; We have carefully considered the Same, and have also perused the Scheme of Learning brought by Him to Us, for the further Explanation of his Design, and proposed to be taught in the said Royal Schole ; and upon the whole Matter humbly offer our Opinion, as follows.

That the Great and Good Work proposed by the Petitioner, well deserves the Promotion and Encouragement of His Royal Highness.

That the Institution appears to be Calculated for a more Useful , Polite and Comprehensive Degree of Naval Knowledg and Instruction, than appears to Us, to have been hitherto in any Time or Place attempted. That

That the Same will undoubtedly be not only of General Use and Advantage to the Navigation of this Kingdom, upon which the Prosperity and Welfare Thereof so much depend ; But also of Great Benefit and Particular Service to the Royal Navy of *England*, in its Several Capacities.

That Such a Foundation, Confirm'd by Parliament, amongst other Advantages to the Nation, may in a Short Time produce a Constant Succession of Persons better Qualify'd to instruct Youth in the Art of Navigation on Board Her Majesty's Ships at Sea, according to Her Majesty's Gracious Intention signify'd by Her Order of Council, dated the 21st of *April* 1702. All

(4)

All which, we desire you
humbly to lay before His Royal
Highness, from

S I R,

Navy Office, Nov.
27. 1704.

Your very humble Servants,

Tho. Littleton,	Hen. Greenhill,
Rich. Haddock,	D. Lyddell,
Dan. Furzer,	Tho. Hopson,
Clo. Shovell,	Sam. Atkins,
Cha. Sergison,	Geo. Tollet,
Wm Tymwell,	Ant. Hammond.

THE Report from the Navy-
Board, of which this is a True
Copy, has bin laid before the Prince,
Who Approves of Mr Maidwell's
Design, and thinks it Deserves
all Manner of Encouragement.

Admiralty Office,
Nov. 30. 1704.

Geo. Clark.

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THE NECESSITY OF EDUCATION.

Education, which is the Acquisition of Arts, and Sciences, for the Support, and Advantage of Life, was decreed by our Creator in Paradise, and is the Fatal Consequence of the Punishment inflicted upon Our First Parent, as his Sentence of Expulsion testifies—*Cursed is the Ground for thy sake, in sorrow shalt thou Eat of it, at the Days of thy life.*

This Necessity of Education plainly demonstrated itself to their Reason, who wanted Revelation, from the Observation of Nature, the System of the World, the Variety of Seasons, the Growth, and Structure of Human Bodies, the Vigor of
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2 *The Necessity of Education.*

the Soul, with the unavoidable Necessities of our Being. Man is stil'd, and was created Lord of the Creation, according to Gods First Charter delivered to *Adam*, and afterwards with a Blessing to *Noah*. *That the Fear of Him, and the Dread of Him, shal be upon Every Creature of the Earth, Air and Sea, into whose hands they are delivered.* Nevertheless this Vice-Roy is born Naked, without Sense, Help, or Defense. Nature at First Thought appearing his Unnatural Step-Mother, by giving such immediat Provision, and Security, to al Inferior Creatures, that his Vilest Subject by Instinct forthwith consults, and Maintains Its Preservation.

But this Imbecillity, and Incapacity of Man in his Infancy, are very sensible Arguments for Education, whose Instructions vindicat this Humiliation, teaching him Humility, by comparing his Present with his Former Condition, and he would be stil unable to stand upon his Guard after this Mortification, if Education did not fortify Weak Nature. By that only we are taught, what we are, and why we are made ; by that learn our Constitution, and our Duty.

Let Man examin Himself, and then without drawing Conclusions from the
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The Necessity of Education. 3

Various Phœnomena's of Nature, the Contemplation of his own Composition will sufficiently prove the Obligation he has to Education. He is fearfully, and wonderfully Made, and his Maker, by the Mechanism of his Body, and the Artifice of Every Part, declares Him form'd for Busyness : especially from the Operations of the Soul, which cannot be Idle; and in this Union is necessitated gradually to know, and instruct Itself, executing Its Functions by the Organical Assistance of the Body. Both which Descriptions, with their Inferences, I shal rather borrow from *Cicero* than from *St Austin* : because in Justification of these Topics, He altogether supplys the Current of his Discourse from his Fountain, *Cap. 24. l. 22. De Civitate Dei*. And the Sublim Heathens make deeper Impressions, whilst by the Single Force of Education they penetrat Mysterys, and are so Quick-sighted by the Mere Light of Nature.

This Great *Roman*, whose Noble Character I shal produce hereafter, to defend the Efficacy of Institution and Inclination, in his Book *de Nat. Deorum*, most accurately delineats the Frame of Heaven, and Earth, the Direction, and Use of Inanimat and Irrational Beings, the Diligent

4 The Necessity of Education.

Concurrence of the Parts towards the Conservation of the whole ; from thence Deducing that al these Things were made to promote the Honor of the Gods, and the Industry of Man, which He says may more easily be understood, if the Figure, and Perfection of Mans Body, be rightly consider'd.

And after a most curious Anatomy of our Admirable Contexture, He argues from the Mathematical Turn of our Internal, and External Workmanship, that we are contriv'd for Knowledge and Labor: And that Nature has molded our Hands and Fingers in a peculiar manner Plyant and Flexible, for the Management of Arts, and the Necessity of different Employments.

'Tis a Crime to abbreviat his Theologi-
cal Notions of the Soul, yet by the Foot
you may guess the Dimension of *Hercules*.
Tusc. 1. Cicero not only surpasses other Phi-
losophers, but Himself, and with surpri-
sing Arguments establishes the Immateri-
ality, and Immortality of our Spirit, from
the Activity of its Facultys ; that it is
Singular in its Essence, Distinct from
Common Known Natures ; of Divine Ex-
traction from the Vigor of its Sense, Wis-
dom, and Wil ; and by Virtue of this
Energy must be Eternal. By

The Necessity of Education. 5

By this Fabrication of the Body, and Power of the Soul, He confutes the Foolish Inadvertency of *Aristippus*, and the *Cyrenaici*, and denies Mans Chief Good to consist in Pleasure, and Idleness. Because as the Hors is made for Running, the Ox for Plowing, and the Dog for Hunting, so Man in a Double Capacity, according to *Aristotle*, as a Mortal God, is born for Understanding and Action.

He seems affected with the same Proof, using it again *lib. 1. de Legibus*, with this Addition, that we find out many Arts by the Suggestion of Nature, and in Imitation of Her, by our Reason and Subtilty invent others for the Necessitys of Life.

Without contradiction the Dayly Necessitys of Life make Education most necessary. Without it Life could not subsist, and this Universal Truth continues from the Beginning to the End of the World. Mankind wil even remain a Debtor to Poverty, and the Heathens esteem'd Her amongst their Deitys for her Useful Sagacity. In the Poet *Aristophanes* She arrogats to Herself the Invention of Sciences, and *Xenophon* cals her Wisdom without a Master. In *Theocritus* She alone incites Arts, and teaches Labor, which Sentiments *Virgil* has paraphras'd in his
Geor-

6 *The Necessity of Education.*

Georgics. Necessity is term'd by *Heliodorus* the Contriver of Designs, and in the Epigram boldly taught the Lame and Blind to supply their Defects. The *Græcs* number'd *Periander* amongst their Seven Wise Men for this Apothegm, *Care performs al Things*; and their Adage, *of the Gods selling nothing without Labor*, is become a Proverb in every Nation. To stop the Luxury of more Quotations crowding upon those who Read, and Convers with the Dead, by whose Experience the Industrious have bin fortunately guided in the Course of their Affairs, as *Laertius* sayes the Oracle told *Zeno* the Stoic, I shal close this Point with an Epitome of that most Instru&ive Tale, Related by *Socrates* in his Scholar *Xenophon's* 2d Book *Ἀπομνημονεύματα*.

Two Women of larg Stature appear'd
to *Hercules* in his Minority, who repre-
sents a Youth of Superior Parts, and great
Expectation; and such *Xenophon* in ano-
ther Place calls Sons of the Gods, by that
Expression opening the Moral of those
Poetic Fictions. The First nam'd Sloth
seem'd the Bolder, and attack'd Him with
al her vain Allurements, thinking to de-
lude his Mind by False Colors. Til Vir-
tu with an Honest Majestic Air assures Him
She

The Necessity of Education. 7

‘ She knew his Birth, and Qualitys; that
‘ the Gods confer’d Nothing Good or Ex-
‘ cellent upon Man without Diligence, and
‘ Application. If he would be Eminent in
‘ any Employment, Civil, Military, or Ru-
‘ ral, He must be Laborious, and Beneficial.
‘ That Idleness is the Hatred of Gods, and
‘ Good Men, never seen, nor spoken of
‘ without Scandal. No Sensible Man dares
‘ own himself of Her Retinu. Her Favo-
‘ rits when Young, are Infirm in Body, and
‘ when Old, Weak in Mind, ashamed of
‘ Past Actions, and unable to sustain the
‘ Present; hurrying over what is pleasant in
‘ their Youth, They reserve Reproach, and
‘ Troubles for their Grey Hairs. On the
‘ contrary, she is always Conversant with
‘ the Gods, and Virtuous Men, and Re-
‘ verenc’d by Them: since no Worthy Deed,
‘ Divine or Human, can be transacted with-
‘ out Her. She best co-operats in the Exer-
‘ cise of Arts, in Familys, in Peace, in
‘ War. Through Her the Young are in-
‘ spir’d by the Praises of the Old, and Old
‘ Age revives at the Reputation of Youth.
‘ Thus They live Belov’d of the Gods,
‘ Deare to their Friends, Honor’d by their
‘ Country, and after Death, do not lye
‘ buried in Disgrace or Oblivion, but flou-
‘ rish with Perpetual Memory.

This

8 *The Necessity of Education.*

This Virtu which animated *Heracles* is the Excellency of Education. The signification of the Apologe is Obvious, and the beautiful Original at full Length well deserves the painting of Our best *English* Poet; for, with *Horace*, it is the Duty of Poetry to profit, as well as please. And such a subject is more agreeable to the First Intentions of the Muses, than the loose Scenes of a Comedy, or the Fulsom Odes to *Phyllis*, or *Cloris*.

The Excellency of Education.

WE may, as it were by Sympathy, conceive the Horror of Our First Parent, when he was drove out of Paradise; and the Prospect of Painful Experiments for Daily Subsistence to have bin very Dismal to Him, who was made Perfect, and by disobedience Fel from a Full Fruition of Knowledge, and Happyness. Yet by the kind Dispensation of a Merciful Judg, the Curse is turn'd into a Blessing to *Adam's* Posterity, in all succeeding Generations. Education bruises the Serpents Head, and restores Man to his Primitive Godlike Image. By that we may know Good, and Evil, without Danger; by that Man becomes the Rational, Prudent, Useful

The Necessity of Education. 9

ful Creature, and like Afflicted *Job* receives twice as much as he had before, and his later End is Blessed more than the Beginning.

By Reason *Man* excels the *Beast* which perishes, by Improvement of Reason *Man* excels *Man*. We differ like Stars in Magnitude, and are accountable for the Increase of the *Talents* intrusted to Us. From the *Stewards* of Ten, or Five, much will be expected, because the Neglect of One is to be severely punish'd: and as we widen our Vessels here by the Labors of an Excellent Education, shall have them fill'd, and be rewarded hereafter. If Life, and Death, are set before Us, whilst we tread this Stage of Trial, we are enabled beyond doubt by Education to make an Happy Choice, for the same *Hebrew* Word in Scripture denotes the Fool, and Sinner.

The Antients were ravish'd with her Charms, and in Raptures recommended her Incomparable Advantages to Posterity. *Aristotle* illustrates them with the Brightest Simile; As the Eye receives Light by the Circumambient Air, so does the Soul from a Liberal Education, and the Learned are distinguish'd by Him from the Unlearned, as the Living from the Dead. *Plutarch* is Encomiastic upon this Excellency above
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10 *The Necessity of Education.*

other *Græcs* in his Book of Education, declaring Right Institution to be the Beginning, Middle, and End of our way to Virtue, and Happyness. 'That other Gifts are 'Corporeal, Little, and not Worth our Affections; Nobility deriv'd from our Ancestors, Riches in the Possession of Fortune, Honor Unconstant, Beauty short-liv'd, Health mutable, Strength obnoxious to Sickness, or Old age. Only Learning is Immortal, and Divine, Plac'd above Fortunes Power, and cannot be Forc'd away by Calumny, Corrupted by Sickness, or Injur'd by Age.

Least my Dissertation should seem too long, *Cicero* shal alone contend with these *Græcs* in this Race of Praise. Omitting many Places, where He enumerats the Inseparable Blessings of *Learning* to Men, as Members of one Body Politic: We read him in his Oration *pro Archia Poeta*, no less in her Recommendation to Privat Persons abstracted from Community, acknowledging from her Infinit Store, to have receiv'd his Qualifications to serve his Friends, and Country. 'That her Pleasures and Profits are Everlasting, they Exercise Youth, rejoyce Old age, adorn Prosperity, support, and comfort Adversity, please at Home, and are no impediment Abroad, 'they

The Duty of Parents.

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if they Lodg with you, Travel with you
' and Keep you Company in your Rural
' Recess. He confesses, that Some by the
Strength of Natural Parts have rais'd
themselves in the World; yet from that
Concession proves, what a Flight such a
Genius might have taken, if it had been
Wing'd by Education.

The Duty of Parents.

Wherefore from these Two Con-
vincing Reasons, of *Necessity*,
and *Excellency*, Al Parents are most strict-
ly oblig'd to Cultivat their Childrens Edu-
cation. Nature, by the Statute of Retali-
ation, requires exact Obedience to her
Law; it being most Righteous for Pa-
rents to do justice to their Children, as
Good Parents have done to Them; other-
wise they cannot Expect the Honor of the
5th Commandment. The Holy Scrip-
tures abound with these Injunctions, and
Solomon makes Frequent Repetitions, em-
phaticaly Remembring the Care of his
Father *David*—*I was my Fathers Son,*
Tender, and only Beloved in the sight of my
Mother. He taught me also, and said unto
me, Get Wisdom, Get Understanding, for-
get it not. And *St Paul* charges Parents

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not

not to provoke their Children, by violation of this Duty.

Solon the Wise *Athenian* Law-giver enacted two most Beneficial Laws, for the mutual Government of *Parents*, and *Children*. By the First, The *Father*, reduc'd to Poverty, was not to be maintain'd by his *Son*, unless He taught him a Trade. By the 2d, The *Son* was branded with Infamy, and depriv'd of Public Employment, if he wasted his *Fathers* Estate. These Penaltys were thought reasonable to restrain the neglect of Education in Both Partys, which occasion'd the Publick Loss of a Citizen.

This Damage to the Commonwealth mov'd *Aristotle*, so much ador'd by the Schole-men for his Decisions, to determin, that *Parents* who have taken Care of their Childrens Education are far more Honorable than Those who only beget Them; for These are but Accidental Authors of their Living; Those of Living wel; meriting double Honor, by being Parents of their Minds, as wel as Bodys. And so Venerable to Antiquity was the Remembrance of this Affectionat Regard to Youth, that *Alexander* profess'd himself more Engag'd to his Master *Aristotle*, than to his Father *Philip*. The Pernicious Breach of

Paternal Duty is laid by *Cicero* most bitterly upon *Verres*, *Orat.* 3. for suffering his Young Son to lead an Idle Profligate Life with him in *Sicily*. By which He not only injur'd his Son, but the State, obtaining Children not so much for his own as his Countrys sake: Intended more for the Future Benefit of the Public, than his Pleasure: Who ought to have bin instructed in the Constitutions of their Fore-Fathers, and the Discipline of *Rome*, and not at Home copy out his Flagitious Example.

As the loss of a Good *Education* is deplorable, without Remedy, to *Father* and *Son*, so the Wel Educated *Son* should never forget this most Endearing Affection of a *Father*. Which *Horace*, as a Pattern of Filial Duty, with greatest thanks remembers to his Patron *Mæcenas*, *Sat.* 6. l. 1. telling him, that he intirely attributed the Fælicity of his Favor and Friendship, to his Fathers Care of his Education, in bringing him to *Rome*, and breeding him generously beyond his Narrow Fortunes, at one of the best Scholes, in the Conversation of Gentlemen.

A Public Education præfer'd to a Privat.

HERE it may not be improper to examine, whether it be better to *Educate* Children at Home, or Abroad. I ever with some Restrictions præfer'd a *Publick* to a *Privat* Education, from my own Experience, and *Quintilian's* Judgment, which He avouches to be consonant to the Custom, and Wisdom of the Antients. He had bin the most Celebrated Præceptor of the *Roman* Youth, and after the Success of 20 Years, at the Request of an Oblig'd Father, bequeath'd to Them the Rich Legacy of his *Institutions*.

In which, *lib. 1. cap. 2.* He gives ample Satisfaction to the Cavils of some *Parents*, that in a Crowd of Boys at a *Public* Schole the Manners of their Sons are Corrupted, and a *Tutor* more at leasure to improve One, than the Ablest Schole-Master can pretend to with a Number. As to the looseness of Manners, He beseeches the Parents of his Time, and I wish they were now more Excusable, to secure their Children from Themselves, and not with so much hazard expose Family-Follies to their Tender Eyes, and Eares; nor encourage the Growth of
Vice,

Vice, by applauding a Pert Boy, for speaking or doing what is unlawful to repeat, before he can guess the meaning of his Fault.

The Base Familiaritys of Servants are more dangerous, than the thoughtles Tricks of Schole-Fellows. Besides, Domestic Effæminacy relaxes the Tone of the Mind, and the Mothers Indulgence often fixes the Rickets in Little Masters Head, by which he grows fit for nothing but an Eldest Son. Thus when he comes with II Symptoms to be cur'd in a great Schole, He brings Infection thither, and does not receive it there. The Common Tutor wants the Practice, and Science of a Public Master, and might better deserve his Salary by performing the Office of a Pedagogue in its Genuin signification, rather like an Assistant conduct his Pupil to and from Schole, than usurp the Institution of the Place. Yet suppose Him Learned, and wel Bred, the Solitude of a Chamber can never æqualize the Vivacity of a Society. Fruit does not ripen wel in the Shade, and at Home the Boy learns only what is taught Him, in a Schole what are taught Others. There Every Day He hears many things commended, and many corrected, reaps an Advantage, by the Shame of this Lads Idleness,

ness, and the Praise of the Others Industry. Commendation provokes Æmulation, and he wil think it dishonorable to yield to his Æquals, and glorious to excel his Seniors.

Moreover, amongst other Emoluments of an Eminent Schole, the Friendships contracted there are very valuable: and not a Few can joyfully witness the Spring-Tide of their Fortune to have flow'd from those Dear Engagements.

Lastly, to remove the Principal Objecti-
on, that by reason of too many Scholars,
some wil be neglected; *Quintilian* is Posi-
tive that no Good Educator should, or
would burden himself with a greater Num-
ber than He can wel manage; that he
wil put on the Concern of a Father to-
wards his Scholar, and act with the same
Disposition. But above al to consummat
his Education, the Skilful Master ought to
calculat the Boys Inclination committed to
his Care, and direct him to aim at a Proper
Mark, always regarding the Byas of Na-
ture. These Virtues of an Educator, *Cicero*
applauds in the Famous Rhetorician *Apol-
lonius Alabandensis*, who despising Mony by
a Multitude of Scholars, honestly dismis'd
Those, whom he found incapable of Ora-
tory, and remarking the Seeds of their
Genius, press'd, and encourag'd them to
follow

follow some other Arts, in his Opinion most Pertinent to their Capacity. *De Oratore lib. 1.*

The Excellency of Education is best procur'd by Application of the Genius to the Dictat of Nature.

THe Inclination of the Mind towards One Occupation of Life more than Another is Essential to Human Nature, and appear'd in the World, as soon as Man was fit for Observation, and Labor. The First Two Sons of *Adam* differ'd in their Intentions, and Imployments. *Abel* was a Keeper of Sheep, but *Cain* a Tiller of the Ground. Also the First Twins mention'd in *Genesis* were no less distinguish'd by the Qualitys of their Souls, than by those of their Bodys. *Esau* was rough, *Jacob* smooth, so was the Method of their Living; for when they met, One was attended with 400 Men, and the Other with Camels, and Asses.

Upon Consideration we find this Difference of Tempers to arise from Providence, and the Law of the Creation, and to be most Evident in al Irrational, and Inanimat Beings. Whose Perfection is visibly appointed One way, and if you press the

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Opposition of their Nature, you destroy it. Every Man feels in himself the same Impuls of Application, and tho by the vast Comprehension of his Soul, at first diverted with a general Knowledge of Objects, and Sciences, yet soon chooses One to be his Favourit, and after the Gallantry of Conversation with several, settles, and Marrys Her, as his Faithful Assistant, to alleviat the Cares of Life.

As the various Necessitys of Life demand help from Variety of Arts and Sciences, so diversity of Arts requires diverse Artificers; and One Man is no more design'd for Al Arts, than Al Arts for One Man. We are born Confederats, mutually to help One another, therefore appropriated in the Body Politic, to this, or that busyness, as our Members are in the Natural to perform their separat Offices; And since Art is long, and Life short, Nature deals kindly with us, by planting this Single Propensity in Our Hearts; for, alas, why should Mortals prætend to Execure many Gifts, who have scarce Time allotted to finish One. St *Paul's* words to the *Corinthians* may with Pardon be apply'd in this Case. *There are Diversities of Gifts, Administrations, and Operations, given to Every Man to profit withal.* And as the

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Renowned Apostle of the *Gentils* asserted Divine Truths from their Writings, I shall summon the most Authentic amongst them, to testify Men to have different Inclinations, and incapable of making themselves Excellent in any Station, without Application of the Genius to the Dictat of Nature.

Know Thy self, was advice worthy of the *Delphic* Oracle, and writ in the Temple, to caution Those, who came thither to interrogat their Fortunes; for, without discerning their own Wils, and Abilitys, it was in vain to hope a successful Answer. Hence, in *Zenophon*, *Socrates* satisfy'd Young *Enthydemus*, who told his Master, he had twice in his Travels read those Words at *Delphi*; that the Import of the Sentence could not be Intelligible, unless he was conscious to what Useful Busyness he was most adapted.

The whole Poetic Race unanimously Vote for Nature, and ascribe to her Irresistible Influence, the Abdication of other Resolutions. Their Breasts cannot admit of Two Cares. Therefore *Ovid*, from his Birth sworn a Client to the Muses, must be disobedient to his Father, and cannot be a Lawyer. *Homer* with more Moderation decides this Question than his Prose-

lytes, for in *Iliad* v. *Polydamus* discourges to *Hector* the Impossibility of Monopolizing al Good Qualitys. The Gods dispose their Favors as they please: To one the Glories of War, to Another the Ornaments of Peace: And in *Odysses* 8. His Proverbial Verse declares *Several Men delight in several Works*. Thus, according to the *Prince of Poets*, Imployments shal be divided into Those of the *Sword* and *Gown*.

The Choice of a *Military Life* is a Potent Argument of a Prævalent Inclination. The Majority of Mankind naturally abhors it, and Poetry lists *War* in the Regiment of the *Furies*, bringing her from *Hel* with a Train of *Miserys*. Indeed Nature has made many Irrational Creatures Fierce, and Warlike by giving them Offensive Weapons: But certainly Purpos'd Man *Mild*, and *Pacific*, by his Make, and Facultys; by his Gentle Aspect, Cheerful Eyes, and Open Arms fit for Embraces. To Him alone she gives Smiles, and Tears, Emblems of Affection and Commiseration; To him an Enticing Tongue, to conciliate, and continu Friendship; To him Zeal for Knowledge to exalt his Reason, and conquer his Wild Passions.

Nevertheless, some Fir'd by a Restless Genius, prefer Tumult, and Danger, to
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Peace, and Safety, affecting the Beat of Drum, and the Clangor of the Trumpet. Yet Wars are often Just, and the Brave Souldier Necessary; whilst *Nimrods* disturb the World, and through Exorbitant Ambition invade their Neighbors Property. This Innate Warmth to Conquest, and Love to their Country, rows'd the *Græc*, and *Roman Hero's*, to persue Fame with Indefatigable Patience, without which They had never gain'd their Lawrels, and Triumphal Arches.

Trees always signify their Fruit by the Blossom, and frequently Men in their Infancy have put out Remarks of a *Military Disposition*. We are certity'd of This in our Themes at Schole from Old Storys: How *Hercules* foretold his Twelve Labors in his Cradle, and by Killing the *Snakes* proclam'd himself Conqueror of the *Hydra*. *Achilles* was prædestinated a Soldier, and the Goddess his Mother could not reverse the Decree of his Nature, which in a Womans Dress, by grasping the Sword, was detected by *Ulysses*. The Victory of *Miltiades* broke the Sleep of *Themistocles*; and *Alexander*, born for the Conquest of *Asia*, could not be the Contented *Dio-genes*, tho' He wisht it, almost convinc'd by the Philosopher, because He was the Ambitious *Alexander*. But

But *Cesar* is an Army of Witnesses, discovering from his Youth an Invincible Ardor for Glory. He declar'd in Words, and Practice, that the Violation of Justice for Empire was no dishonesty, and was so Impatient of a Superior, that he wept for not being *Æqual* to *Alexander* in Heroic Actions at his Age; chusing rather to have bin the *First* in a Poor *Alpine* Village, than *Second* at *Rome*.

This Impetuosity of *Cesar* is the more observable, because He was as wel qualify'd for the Honors of the *Gown*; and *Quintilian* professes, that had He apply'd himself solely to the Busyness of the *Forum*, he would have bin nam'd Next to *Cicero*. So powerful, and acute were his Orations, that he seem'd to have spoke with the same Spirit as he Fought. *Cicero* likewise highly praises his Oratory in his *Brutus*, but tels *Atticus*, lib. 7. *Epist.* II. *Que sit idem Cesaris*—that his insatiable Appetit was to be Lord of his Fellow Citizens.

In like manner, the Direction of the Mind is to be regarded in *Civil Employments*; without which Gratification, None ever became Great in any Station. It is in vain to swim against the Stream, and as Bodys by the Canon of Nature tend to
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their Proper Center, so the Facultys of the Soul move best in their Natural *Vortex*. This the Gravest Philosophers experimented, and tho bred, and exercised in distant Employments, were always uneasy in their thoughts, til they fel into the Course of Life apposit to their *Gemino*.

Of this Class was *Socrates*, the Son of a Stone-cutter, who first work'd at his Fathers Trade, and is suppos'd to have made the Statues of the *Graces* in the *Tower of Athens*; afterwards attempted *Poetry* with *Enripides*; and *Oratory*: yet without inward Quiet, having, like the Disturb'd Needle in the Compass, not found his Point. His Passive Spirit circumscrib'd his Desires, and his Natural Morality render'd him unfit for the Shifts, and Tricks of the World, preparing Him to be the Father of the *Ethic Philosophy*, to be Virtue's Confessor in his Life, and her Martyr in his Death.

The Life of Plato:

Plato, of all his Followers, is the Truest Resemblance to my Purpose, in whom *Wit, Application and Diligence*, shew'd their Master-piece: I presume a larger View of his Extraordinary Life may be acceptable, and Exemplary to *Young Gentlemen*.

He was Noble by Birth, and Disposition, descended by his *Father* from *Codrus*, the last *Athenian* King, who, to his Immortal Honor, died for his Country: By his *Mother*, from *Solon* the Famous Legislator: His Excellent Parts, and Sweet Eloquence, gave Credit to the *Storys* of his being begot by *Apollo*, and of the *Bees* making Honey in his Mouth, as he lay in his Cradle. He was bred up to the Nicest Education of that Time. In *Grammatical*, and *Geometrical* Learning, to facilitate Arts, and Languages; In *Music* to compose his Mind: In *Gymnastic Exercises* to confirm his Body; In *Painting* to propagate Ideas; In *Poetry*, and *Tragedy*, to give Invention, and graceful Elocution. Thus he was qualify'd for the Highest Employments of the Government: But Nature commanded Him to be a *Philosopher*, and compel'd Him

Him to burn al his Poems and Tragœdys,
upon hearing the First *Socratic* Lecture.

When his Father brought Him in the
20th year of his Age to *Socrates*, His Ju-
dicious Master cry'd out in an Ecstasy,
This is the *Young Swan* I saw in my Dream
last night, which feather'd in my lap,
and soon spreading its tender Wings, flew
up towards Heaven, filling the Air with
Melody. His future Glorys, and Travels,
in search of Learning, exactly fulfil'd this
Prophecy, for none ever with more dili-
gence made his Court, or strove to find
Her out in al her Recesses.

He left *Athens*, after the death of *So-
crates*, to improve his Intellectual Estate
in other Countrys, and turning *Merchant*
for Arts and Sciences, traded in Person
with al the *Learned Bankers* of the World,
He went to *Tarentum* in *Italy*; To *Cyrene*
in *Libya*; To *Mount Ætna* in *Sicily*; He
convers'd with the *Ægyptians*, *Phenici-
ans*, *Jews*, *Assyrians*, *Babylonians*, *Chalde-
ans*, *Persians*, and *Thracians*: And having
by this Virtuous Avarice collected an Im-
mense Treasure, return'd Home the most
Accomplisht *Linguist*, *Mathematician*, *Phi-
losopher*, *Statesman*, and *Divine*.

To Benefit his Country He founded the
Academic Schole, attracting by his Fame

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from al Parts Crowds of Auditors, who became most Considerable in their Facultys, amongst whom *Aristotle* and *Demosthenes*. He was opposit to the *Morose Cynic*, and very affable in his Conversation and Instruction, suffering Women to attend his Lectures in Mens habit; and as *Olympiodorus* assures us, The Only Man belov'd by *Timon the Man-bater*. The vast Cataloge of his Incomparable Volumes upon al Subjects magnify the *Authors* dignity, and the unweary'd progress of his Studys; which He continued to the 81st year of his Age, when He died on his Birth-day Writing. To whom the *Magi* then at *Athens* Sacrific'd, as to One Supernatural, and Belov'd of the Gods, for dyng in that year, when the Mystic Number of Nine times Nine is compleated.

This is that *Plato*, whom *Cicero* adores, and cals *Divine*. This is *He*, who in *Quintilian's* Words, resembles in his Discours not so much the Wit of Man, as some Instinct of the *Delphic Oracle*. This is the *Plato*, to whom many Fathers of the Church justly pay such Reverence; for, being *Platonists*, by Affinity of Principles, they had the Happyness to be more easily translated into *Christians*.

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The Life of Cicero.

NOne of *Plato's* Associates, or Disciples, were Adæquat to him in al Particulars, therefore we must march to *Rome* for a Parallel ; which, of all *Romans*, is found in his Admirer *Cicero* : tho *Plutarch* compares him to *Demosthenes*, from the Similitude of their Vocations, and unfortunat Deaths : Yet *Quintilian* dares oppose him to any *Græc*, and unites in his Orations their Singular Gifts ; The Copiousness of *Plato*, the Sweetness of *Isocrates*, and the Force of *Demosthenes*. Whose Noble Character I promis'd in the Beginning of my Essay, as very Conclusive, and shal with Him shut up this Chapter.

Cicero was born in *Italy* at *Arpinum*, a Town of the *Volsci*, now *Arpino*, in the Kingdom of *Naples*, Son of *Marcus Tullius* a Roman Knight ; and tho by his Envious Adversarys cal'd *Upstart*, is reputed by *Silius Italicus* and *Plutarch* to have bin descended from *Tullius* King of the *Volscians*. His Mother *Helvia* brought him into the World without pain, and his Nurse was foretold by an Apparition that He would live to be the Safety of *Rome*.

He was so *Pregnant and Bright* at Schole, such a *Prodigy of Nature*, contriving by *Art and Industry* to finish a Man, that the Parents of the Scholars came thither, to know and admire him: and walking in the Streets, He was plac'd in the Middle by his Schole-fellows, as a Mark of *Præference*.

After his Puerile Studys, In the 16th year of his Age, He took the *Virile Gown*, and, brought by his Father and Relations, according to Custom, into the *Forum*, was admitted to the *Bar*. Whose Renown He was, and for that Inspir'd by the Appetit and Vigor of his Soul, tho at first much discourag'd, as *Demosthenes*, by the Inability of his Body. He imploy'd *Ten years* before he ventur'd to Plead, in all Exercises of Science requisit for a Perfect Orator; who, he says, and he best could tel, requir'd more Accomplishments than another, because most Expos'd to Censure, and least Excus'd.

In his 17th year He polish'd his Classic Learning, and pleasing himself with *Poetry* and *Astronomy*, Translated *Aratus* into *Latin Verse*, whose Fragment is extant in his Works.

In his 18th year He apply'd himself strenuously to the *Civil Law* under *Quintus Scævola*

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Scevola the Augur, and after his death under *Scevola* the Pontifex, both most Eminent in that Profession. This year He made a Campagn with *Sylla*, and was at the Siege of *Nola*, but left him before Winter Quarters, being not constituted for the Triumphs of the Sword.

In his 19th He studied *Philosophy* with *Philo* the Academic, who had bin drove with many Noble *Athenians* by *Mithridates* from *Athens*.

In the 20th He improv'd his *Rhetoric* with *Molo* the *Rhodian*, during his Embassy at *Rome*, no less famous for Instructing, than pleading of Causes, and having at Intervals writ *Commentarys* of *Invention*, now publish'd them as a Specimen of the Future *Cicero*.

From the 21st, when the Senior *Marinus* died, and the Civil Wars began to cease, to the 26th, He tells us himself in *his Brutus*, how He spent, and valued his Time, Converſing with al the *Men* of *Letters*, especially *Diodotus* the *Stoic*, who taught Him *Dialectics*, living many years, and dying Blind in his House; yet, to *Cicero's* admiration, could most acutely manage *Philosophy*, *Musick*, and *Mathematics* without Sight. In these five years He much practis'd *Græc* Declamations,
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and Translations, and hence fram'd, and put out his three Books of *OEconomics* from *Xenophon*. He was never Idle, laboring Day and Night, to lay up in his Youth sufficient Materials, to raise those Immortal Works of his Manhood, and Old age.

In his 26th He pleaded his *First Cause* for *P. Quintius*, and soon after for *Sextus Roscius*, with mighty Reputation. But because of his *Lean Weak Constitution*, and *Sbril Voice*, being advis'd by Friends and Physicians to decline the laborious Profession of an Advocat, lest it might in all probability hasten his death, He absolutely rejected their Counsel, resolving rather to run the extremest Danger, than forsake the Hopes of Glory.

Yet he travel'd near *Three Years* to correct this ill habit of Body, and Elocution; nevertheless without cessation renews his Studys at *Athens*, Six Months with the Fam'd *Antiochus*. Passes over *Asia*, to practise with the most Exquisite Philosophers, and Professors of Eloquence; at last comes to *Rhodes*, to visit his Former Master *Apollonius Molo*, and there being requested to *Declame* in *Græc*, He so astonish'd *Apollonius* and the Auditors, with the Wonders, and Graces of his Tongue, that he
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fighing cry'd out, O *Cicero*, I admire, and praise you ; but pity *Poor Greece*, who now must be forc'd to surrender Learning and Eloquence, the Only Remains of her Grandeur, to be carry'd away by You, as your Trophy to *Rome*. Having secur'd his Health, and a pleasant Harmony of Speech, hearing of *Sylla's* Death, He returns Home, where He so Rul'd in the *Senat*, and *Forum*, that *Cicero* was no longer the Name of a *Man*, but of *Eloquence*. This was *He*, who was born to illustrat and save the *Roman* People. This was *He*, who by their Præservat[i]on in his Glorious Consulship, deserv'd, and First receiv'd the Title of *Father* of his *Country*, above, and before an Emperor ; and thus This Excellency was obtain'd by Application of a *Genius* to the Dictat of Nature.

Contrarys strengthen *Propositions*, and the Veracity of this is no less confirm'd by the Disparity of Young *Cicero* to his Father, who by Authority and Præcepts could not alter Nature, nor oblige Him to tread in his Steps ; endeavouring this Chang at *Rome* by al possible means, and by committing him at *Athens*, as the last Remedy, to the Tuition of *Cratippus* : He wash'd the *Æthiop*, and the Soil was not Genial to the Seed. The *Father* perceiv'd

ceiv'd his mistake wel enough, since amongst many Infalible Rules in his 3 *Books of Offices*, which he writ not long before his Death, for the Service of his *Son*, he orders him to Scrutinize his *Genius*, and nicely Judge Its Qualifications; to be as Prudent as his Acquaintance *Æsopus* the Player, who chose Parts best accommodated to his Humor, and that he ought to act as discreetly in his Life, as the *Actor* on the Stage. His young Head was more turn'd to be a Souldier, having bin with *Pompey* at the Battel of *Pharsalia*, and now leaving *Athens*, to go with *Brutus* into *Macedonia*. But the Wise *Cicero* rather wish'd him a *Defender* of his *Clients*, and a Chief Commander in State Affairs; very wel understanding the Necessity and Advantage of that Station in the Commonwealth. Wherefore before those Tumultuous Times, He vehemently exhorts the *Roman Youth*, *lib. 1. de Oratore*, to prosecute the Education of an Orator, as most necessary: by which they might be Honorable to Themselves, Serviceable to their Friends, Profitable to the Public, and upon that account merit Public Encouragement. Which brings me to my last Consequence.

That

That All Wise Governments have preferred an Education necessary to their Constitution, and Interest; and for this Reason, England Oblig'd to cultivate the Art of Navigation.

SELF-Preservation is the Principal Article of the *Law of Nature*, and we are guilty of the Blackest Ingratitude if we despise them that do us Good. The *Perfians*, who worshipp'd the Sun, were thought the most Reasonable Idolaters, for paying Veneration to their *Dayly Benefactor*; and it is the hardest Lesson in Christianity to Love our Enimys. At the Confusion of *Babel* Former Relations were forgot, and they combin'd together, who spake the same Language, and could do the Best *Mutual Service*. Upon Dispersion of Nations, and Settlement in different Quarters, Every Body became Politic, and consulted Its own *Interest*. Distinction of Climats begets Distinct Tempers, and Variety of Situations requires various Securitys. *Pythagoras* says *Power dwells near Necessity*, and no Region is afflicted with a Native Distemper, but naturally produces Plants to cure it. These Truths are as
 clear

clear as the Sun, who by Vicinity, or Distance, alters our *Methods* of *Living*, and by Direction of the First Cause communicates separat Blessings to this or that Country, to maintain Good Wil amongst Men by *Trade*, and *Merchandize*. The Circumstances of a Country, at first oblig'd Inhabitants to invent *Arts* for their Help and Advantage, which afterwards became necessary to Posterity, in respect of their *Constitution* and *Interest*.

The *Egyptians* are recorded the First Inventors of *Astronomy* and *Geometry*, from the Praxis of whose Problems *Arithmetic* proceeded, and is their Constant Attendant. *Astronomy* was easy to Them from their Open Plane Country, extending a Larger *Horizon*, and from the long Serenity of Days and Nights, affording a Clearer Observation of *Heavenly Bodys*. Yet since, from the Yearly Inundation of the *Nile*, which fattens their Sandy Soil by overflowing It, Landmarks were disorder'd, and Every Mans *Property* confounded; they were necessitated to præfer the Use of *Geometry*, which signifying the *Measuring of Land*, restor'd *Mæuri* and *Tuum* to al the Inhabitants. Thus it became the National Education, Inseparable from the *Interest* of the People, and made

Egypt

Aegypt the First *Academy* of the World; drawing Strangers thither to learn an Art so useful, and satisfactory, that *Plato*, by an Inscription over his Schole-Dore, prohibited him to be his Scholar, who was ignorant of *Geometry*.

The *Babylonians* affected *Astronomy* before other Sciences, from the same Benefits of Habitation, and by Superstition perverting it into *Astrology*, turn'd South-sayers, and Magicians, and were the more regarded by the Commonalty, because the *Eastern Princes* were pleas'd with that Deceit, giving it Præheminence for Reasons of State.

The *Phenicians*, being a *Maritim People*, by the assistance of *Geometry* and *Astronomy*, began, and persu'd the Art of *Navigation*, as most serviceable to their Constitution; enriching themselves by *Traffic*, and enlarging their Dominions by Plantation of Colonys, as at *Carthage* and *Cales*. The Famous *Tyrian Hercules*, who, living long before the *Theban*, conquer'd *Geryon* in *Spain*, was no more than a Bold Merchant Adventurer, for, in the *Phenician Language*, *Hercules* signify'd a *Merchant*.

From these Dark Ages, let us enter *Historical*, where we are satisfy'd, al Regular Governments to have bred their Youth in

Political ways of *Institution* ; by which they advanc'd themselves to the greatest Honor, and Imployments ; but if their Situation permitted, always promoted *Naviga- tion*, otherwise They dwindled in the World, and expos'd to Insults of Invaders, suffer'd the worst Misfortunes, by neglect- ing the *Preservation* ordain'd by Provi- dence.

And this Paragraph happily introduces the *Intentional Design* of this Treatise, which is after a Prævious Invitation of Youth to a Proper, and Profitable Educa- tion, to set forth the Benefits of *Navigati- on* to All in General, and from thence Re- port the Immutable Possession of them to the *English Nation* in Particular ; if Au- thority pleases to establish a Constant In- crease of Navigators, and qualifys Them, by *Foundation* of *Public Scholes*, for the better Teaching the Art of *Naviga- tion*, af- ter a Nobler Improvement than formerly in all Its Capacities.

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The Advantages of ~~Navigation~~ ^{Navigation}.

THe First *Shipwright* receiv'd Orders, and Instructions from God, as *Master Builder*, who in the *Ark* rescu'd Mankind from a Total Extirpation: by which a *Ship* may wel be Nominated the Security of the Covenant in the Rainbow, — *That the Waters shall no more beeome a Flood to destroy Al Flesh*: And as Once Its Cargo was the Wealth of the Whole World, so ever since the *Ship* brings It to Us. The Partitions of the Continent, by the Numerous Inlets of the Ocean, invited Man to attempt *Navigation*; and the Want of Foreign Commoditys, with the Convenience of Carriage, provok'd the Prosecution.

The *Mediterranean Sea* was of itself a powerful Instance and Motive to the *Phenician* Mariners, being cut on purpose to carry on the Commerce of *Europe*, *Asia*, and *Africa*. Thus the *Theffalian Argonauts* ventur'd an Expedition from the *Ægean* to the *Euxin*, to fetch the Golden Fleece, and hung up their *Vessel* as a Lasting Memorial amongst the Constellations. The *Lords* of the *Sea* must be *Lords* of the *Land*, exacting Tribute through-

throughout the Globe, and putting on *Neptune's Epithet* in *Homer*, make the Earth to tremble.

From the *Confæderat Græcs* Sailing to the *Seig of Troy*, to our Time, the *Noblest Revolutions*, and *Conquests*, have bin perform'd by *Navys*. *Athens*, tho in *Cicero's Phrase*, the *Parent of Humanity*, *Learning*, *Religion*, *Laws*, and *Justice*, had never defended Herself against the *Devouring Army of Xerxes*, without the *Defence*, by the *Oracles Advice*, of a *Wooden Wal*, nor disgracefully baffled the *Proud Monarch* without her *Fleet at Salamis*.

When the *Athenians* in the *Peloponnesian War* grew *Negligent*, and *Weak at Sea*, the *Spartans* overcame them, ruin'd their *City*, and enslav'd them to the *Despotic Wil of 30 Tyrants*, not by the *Old narrow Institutions of Lycurgus*, but by the *Modern Equipping of their Navy*, and the *Valour of their Cunning Admiral Lysander*.

The *Romans* had reason to adorn and name their *Orators Pulpit* from the *Beakes of Gallys*; for, unless they had apply'd themselves to *Navigation*, their *Eagles* had bin confin'd more than 500 years within the *Bounds of Italy*. The *Overthrow of Carthage*

Carthage by Sea presently gave them Liberty, and multiply'd their Trophys by Land. And the miserable *Carthaginians* knew themselves Undone without Reprieve, when *Rome* commanded them to Level their City, and build Another ten Miles from the Coast.

Augustus indeed has his share of the Empire by overcoming *Brutus*, and *Cassius*, at *Philippi*; but Dated the *Æra* of His Universal Monarchy, from the Decisive Naval Victory at *Actium*. Near which Place, about 1600 Years after, the Memorable Fight between the *Turks* and *Christians*, was fought in the Gulph of *Lepanto*; which Loss the *Turks* never recover'd at Sea, and thought once of deserting *Constantinople*, if the *Christians* had bravely persu'd their Conquest at Land.

These Few Touches of *Marine Glories*, I hope wil not seem Irregular, since the Rough Draught is offer'd with an intire Devotion towards the Public Good of my Country, that by Reflection of Naval Dominion, and Its unlimited Success, *Englishmen* may remember, and recover their Natural Right, and Power. That, if they love One another, as 'tis their Duty, it is very improbable for Man to hurt them. That in *Immemorial Times*, They suffer'd

In-

Invasions of *Danes* and *Normans*, only for want of their *Wooden Wal*; and that in their Grand-Fathers Memory, they humbled the Pride of *Spain*, by *English Hearts*, and *English Oakes*: And may with the same Benediction Curb in our Dayes the Insolent Ambition of *France*.

Especially with this Proviso, if *England* would more delight in *French* Virtues, than *French* Vices, and not so much follow the Fashions of *Toyes*, and *Cloths*, as the *Oeconomy* of their *Navy*, their Modes of Increasing *Sea-men*, of Instructing, and Supporting *Youths* throughout the Kingdom in the *Art* of *Navigation*, as the Printed *Ordinances* of *Lewis* the 14th. do magnificently testify. By which *Wisdom* of the *Serpent*, He has improv'd, and yet to the Disquiet of *Europe*, pushes on the Grandeur of *France*. Without which *Counter-mine* we shal never be able to Reduce, and Keep *Him* in Due Bounds, nor expect to *Retreive* our Antient Honor, unless we Beat our Enemy with his Own Weapons.

Wherefore now, Thanks to Heaven with its Co-operation, We begin to open Our Eyes, since Our *Gracious Queen* has Recommended the Encouragement, and Promotion of *Seamen* and the Great Council

vil of the *Nation* has by Law effectually establish'd the Same. Which Care already incites Them to signalize their Duty, and to *Fix* Her Royal Standards by the Pillars of *Hercules*.

His Motto of *Ne plus Ultra* will be no Stop to Her *Floating Castles*, when Her *Wise Senat* proceeds to finish the Late Noble, and Necessary *Resolutions* of Encreasing, and Perpetuating Skilful Navigators, by the Better *Instruction* of Youth in the Art of Navigation.

The Authors Design, and Endeavours to promote This Public Good, for the Interest of the Nation.

HIS Design of the *Royal Schole*, for the Better Education of Youth in the Art of Navigation; and the Great Benefit This Nation shal enjoy by Its Promotion, and Establishment, will be seen in the Truest Light, by opening the *Proposals* He was Order'd by the *Honorable House of Commons*, to lay before the *Honorable Committee* appointed for the same: And likewise by Relating His Further Proceedings in the last Session of Parliament.

Which *Proposals* were to this Effect.

H

That

That the Value of his *Estate* for the Settlement of *This Schole*, before He obtain'd his *Letters Patent*, had bin duly examin'd by Two Attorney-Generals ; and that Sir *Tho. Trevor*, by order of Council, perus'd his *Deeds*, and *Rent-Roll* taken from the Parish-Book, to the value of 500 *l. per ann.* And then made his Report, declaring the *Legality, Truth* and *Benefit* of the Proposals. The Copys of which Report, and *Rent Roll* were laid before the Honorable *Committee*.

That his *Estate* had bin view'd, and consider'd by several Worthy Members : That his *Larg Brick-House* was situat in an Open Healthful Air, in the Parish of *St James Westminster*, Wel-wal'd about, with spacious Ground, and Out-houses, and other Conveniencys for the Purposes abovemention'd ; as many *Honorable Members* of the Present Parliament, Whom he had the Honor to *Educate* there, would justify.

That He had expended there near 3000 *l.* besides Considerable Alterations lately made for the better Accommodation of the *Royal Schole*, and had upon that Account refus'd for 4 years last the profer'd Rent of 150 *l. per ann.* ; not at all press'd by his Circumstances, or Mercenary Obligations, but

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To promote This Public Good. 43

Freely inclin'd to dedicat that House and Ground at Present, and his other *Estate* of 350 *l. per ann.* for 99 years after his Death, as his *Charter* directs, for this Necessary Service of his Country, hoping, and endeavouring by his *Generosity*, the Beginning and Perpetuating in his Time, an *Education* never practis'd before in any *Domestic* or *Foreign Schole*, for the Honor and Advantage of *England*.

That by *Purchasing* an Assignment of the whole Lease, consisting of *Ground Rents*, and many other Houses with large Gardens, Contiguous to his Dwelling-House, He became *Tenant* to the *Crown*; and in Consideration of his Great Expences, and Former Services to the Public, by converting the said House to a Schole for the *Education* of Youth, He obtain'd by *Letters Patent* from the late King *William* and Queen *Mary*, the Additional Gift of 99 Years, after the Expiration of his Former Lease. And then to give a grateful Demonstration of his Constant Zeal for the Advancement of *Education*, He procur'd *Letters Patent* of his late Majesty in the last year of his Reign, to Erect and Establish a *Royal Schole* in the same House and *Estate*, at his Wil and Pleasure; where 40 *Scholars*, Sons of Gentlemen, besides

their Improvement of *Græc* and *Latin*, to qualify them for our Universities, were to be instructed *Gratis* in the Modern Tongues and *Mathematics*, especially in those parts, requisit for the *Sea Service*, very beneficial to this Nation; with several Powers and Privileges for Benefactions to Accomplish the Same, as by the *Letters Patent* then produc'd did more fully appear:

But, observing in the *Last Session* of Parliament, that the *Honorable House of Commons*, according to the Design of Her Majesty's most Gracious Speech, had Resolv'd —

That Provision be made by Law for the Better Education of Youth in the Art of Navigation.

He, in great Regard to that *Vote*, very agreeable to His Intentions, *Presented his House and Estate* to the *Honorable House of Commons*, towards the Support of the said *Resolution*, praying that Leave might be given to bring in a *Bill* to Confirm His *Letters Patent*; which he submitted to the *Honorable Committee*, to make *Alterations* in such Parts as might be thought most expedient for the Purposes aforesaid.

These Honest *Proposals* procur'd these Two *Honorable Resolutions*.

Resolv'd, *That it is the Opinion of this Committee, That the Great and Good Work propos'd by the Petitioner, wel deserves the Encouragement of this House.* Re-

Resolved, That it is the Opinion of this Committee, That the House be moved for Leave to bring in a Bil for making such Alterations in the Petitioners Letters Patent, as may be proper for applying his Propos'd Estate, as a Foundation for the Maintenance, and Education of Youth, in the Art of Navigation only; with such further Provisions, and Enlargements, as may best conduce to the Better Support of the said Work.

And Leave was given to bring in a Bill accordingly, which was Read once, and order'd a Second Reading, but the Close of the Session transmitted it to an Early Application in This; when I am assur'd by Many Patriots, It wil be Crown'd with Success: And the Easy and Useful Method of Its Second Support, without any Public Charg or Prejudice whatsoever, wil appear as Necessary, as 'tis Rational, and be Ratify'd by Authority, for the Accomplishment of this National Benefit. Since the Merit of the Cause upon Enquiry has discover'd It self, and Those who did, or would not know, are answer'd, or satisfy'd.

This

This is the *Matter of Fact*, and This is a Work as *Useful* as 'tis *Virtuous*, and tho the Most Public-Spirited Undertaking may be Retarded by *Misrepresentation*, and Miscal'd a Project of Privat Profit; yet *Truth* is Great, and with Patience does prevail. Wherefore This *Undertaker*, as an Upright Dealer, is the more Confident, because He acts without *Self-Interest*. And præsumes hereafter to deserve, and receive *Public Thanks*, for applying his *Propos'd Estate* according to Order, as a *Foundation* for the *Maintenance*, and *Education* of Youth in the Art of *Navigation*; for finding out such Further *Provisions* and *Enlargements*, as may best Conduce for the Better Support of the said Work, and for bestowing his Skill and Qualifications, as a *Faithful Guardian*, to manage the Concerns of a *Ward*, whom he has adopted, and upon whom He has plac'd his Affections.

And likewise takes leave to say, without Reflection, or Resentment, that he observes no man to remain an *Antagonist*, who has impartially weigh'd the *Excellency* and *Integrity* of his Design; and whereas No Just Judg condemns without due Examination, It raises his Wonder, and of all his Friends, who are, or were *Members* of our *Universities*, why Some of those Learn-

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ed Heads, without Publication of their Reasons, oppos'd Him. Many of them, who know Him, very will understand his *Principles*, which never were for setting up *Altars* against *Altars*; and have assert-ed the Innocence and Goodness of his Un-der-taking: For He, by Inclination and Duty bound, was, and is a Faithful Friend, and Servant to their *Societys*, abhorring them, who with Evil to their *Sion*. He oblig'd himself by his *Charter* to qualify Scholars for their Instruction, and now upon Non-Acceptance of his Kindness, pro-poses an *Education* Excentric to their Col-legiat Studys, for the *Art of Navigation Only*. If the *Best*, and *Greatest* amongst them, are thoroughly satisfy'd, sure the Rest ought to be Converted, and streng-then their Brethren, after a Fair *Trial*, and *Recommendation* of the Honorable House of Commons.

To conclude, the Author has often bin told, that this *National Advantage* needs not these *Apologys*, yet He writes them in Justification of his Respects, and Proceed-ings, and wil ever strive to shew his *Faith* by his *Works*. This is Mr *Maidwell's Do-nation at present*, for the Service of his Country, and if his Fortunes were æqual to his Wil, He would above al Things do
This

48 *The Authors Design, &c.*

This *Great, and Good Work* alone, nevertheless *He*, that flings his *Mite* into the *Treasury*, is to be accepted. But next to that, should esteem it his *Greatest Happyness*, to be the *Occasion of Fixing, and Perpetuating* in his *Time*, such an *Infallible Blessing* to *Future Generations*. By Authority of the *Queen, Lords, and Commons Assembled in Parliament*.

Moreover, that his *Public Intentions* may evidence his *Modesty*, and invite *Men of Learning and Candor*, to joyn *Auxiliary Forces* for the *Perfection of this National Education*: And whereas his *Bil* Read in the *House*, mention'd, *That the Youths, and Scholars to be Maintain'd, and Educated in the said Schole, shal be Taught, and Instructed only in the Art of Navigation, and such other Parts of Mathematics, and in such Languages, Relating to the said Art of Navigation, as the Governors for the Time Being, with Advice of the Master for the Time Being, shal think fit*. He therefore *Publishe*s the *Scheme of Learning*, Propos'd to be *Taught in the Royal Schole*, as it was deliver'd, and humbly submitted to the *Honorable House of Commons*.

THIS Institution being Calculated to the *Perpetual Honor, and Advantage of England*, for the Free Education of a Certain Number of Gentlemen's Sons, in a more *Useful, Polite, and Comprehensive Degree of Naval Knowledge and Instruction* than hath been hitherto, (so far as any thing appears,) in any Time, or Place Attempted; In Order towards Fitting them for the *Service of the Public, and Advantage of their Familys*: It will be Suitable and Necessary, that the Foundation of this Undertaking should be Sufficiently

I

Large:

Larg : To Answer as well the Capacities and Qualities of those that are to be Educated, as to take in the Full Extent and Scope of that Education which is thereby intended.

Navigation.

In its True Extension, is that Marine, and Naval Science, which Comprehends whatever has Relation, either to Ships, or to the Seas whereon they Move, in order to the Perfecting a Prosperous Voyage, or Navigation of what sort soever. Some Particulars whereof are these that follow ; *viz.* The Fabrication, Expence, and Uses of a Ship, and of its several Parts. The Knowledg of Sea-Coasts, Banks, Sands, and Harbors ; Tides, Winds, Tornado's, Hurricanes ; The Naval Direction and Government of a Ship at Sea ; Naval Oeconomy, with the Laws and Customs of the Sea, Civil and Military. An Exact Knowledg of of the Motions of the Sun and Moon, and of such Instruments as are properly and commonly made use of in Coelestial Observations, Relating to the Sea, The Construction, Management, and Application

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cation of Machines imploy'd in Naval Services ; with Sufficient Knowledg concerning the Effects resulting from them. The Conducting and Directing Fleets so far as may be taught in Scholes : With divers other Useful Naval Speculations.

*But Common Scholes in a more
Narrow Method Teach.*

1. The Care and Skill of Conducting a Ship or Vessel well, into, or out of a River, Road, or Harbor ; (called *Pilotage*). 2. The Knowledg of the Mariner's Compass ; Of Soundings, Lands, Points, Distances, Depths of Water, Shoals, Sands ; the Qualities of Grounds and Streams ; the Point of the Compass whereon the Moon makes High-water in several Places, and the like ; (called *Coasting-Navigation*). 3. The Direction of a Ship's Way from One Port, or Part of the World, to Another, separated by One Sea, or More ; Keeping an Account of the Ship's Movement on the Surface of the Sea according to the Methods of *Plain-Sailing*, *Mercator's Sailing* or *Great Circle-Sailing* ; The being able by Cœlestial

ial Observations to Correct such Errors as unavoidably will happen when those Observations are wanting; An Exact Knowledge of the Ship's Place at all Times, and what Course and Distance She must sail to Arrive at an intended Port or Place. These Things, with some Few more, are generally Esteem'd, and Taught for Navigation: But are indeed, scarce all the Virtues of one Good Officer; To wit, the Pilot, or Master of the Ship.

Therefore that the End for which this Naval Education is Design'd, may not be Disappointed, by taking in too Few Particulars, and that the Institution may be Competently General, and Useful to the Public; The Arts, Sciences, and Languages hereafter mentioned, are Propos'd, in this Schole, to be Sufficiently and Accurately Taught, *viz.*

I.

Geometry.

Elementary, and Practical, for so much as Relates to drawing Schemes.

II

Arithmetic.

In all the Usual Necessary Parts thereof, *viz* In Whole Numbers; Fractions Vulgar, and Decimal: Extraction of Roots; Construction and Use of Logarithmical Tables, &c according to the Practices of all known Trading Nations.

III.

Algebra.

With the Application thereof in Arithmetic, and Geometry; so far at least, as to perfection in Quadratic Equations.

IV.

Mechanics.

Or that part of Geometry, which Treating of Motion, Contemplates according to Geometrical Rules, by what Force,

and in what Time, any (possible) Motion may be perform'd: With the Construction and Application of Machines and Powers, proper and in use, for moving Heavy Bodies, *viz.* The Ballance, Leaver, Axis in Peritrochio, Pulley, Wedg, Screw, &c.

V

Statics.

A Science treating of Heavy Bodies; their Weight, Centers of Gravitation, Equilibration, &c.

VI

Hydrostatics.

The Art or Science of weighing Liquids, or Solid Bodies in Liquids: And comparing one with another, &c.

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VII.

Surveying of Land.

The End of this Art being to find the Area, or Superficial Content of some Quantity or Parcel of Ground contain'd within one Hedg or Limit, (or if within many, yet such as Ultimately terminat in one.) The Art it self may seem to be Remote from Navigation. But passing successively by all the Bendings of an Inclosure; and taking, by the help of a *Circumferentor*, the Position of every Hedg or Limit with that immediately before and after it; together also with the Length of each Hedg or Limit by the *Chain*; And lastly joyning these Orderly together, by the help of a *Scale of Æqual Parts*, and a *Protractor*: This Method of proceeding in Surveying, is, truly neither more nor less than keeping an Account at Sea of a Ships, several Courses, and the Distances sail'd thereon: And laying down from thence, the several Traverses upon a Chart or otherwise; for finding out the true Place of a Ship at any Time, and what depends thereon. And this is Noted

here in regard that Surveying, Fortification, and divers Other Arts and Sciences which seem not to Relate to *Navigation*, are nevertheless Essentially subservient thereto.

VIII.

*Fortification, or Military
Architecture. Castrametation,
or Encampments, &c.*

That is, the Art of joyning certain Lines together at the Angles of a *Polygon*, in such a manner, that Walls, or Banks, or Both, being built according to the Measures of those Lines and Angles: The Place, whether Town, Citadel, Fort, &c. may be thereby Render'd so Secure, that a competent Number of Men with Ammunition, may be capable of Resisting, with advantage, a more considerable Army. To this may be added the Methods of Encamping Armies, and Besieging Garrisons, &c.

IX.

Perspective,

Or the Art of Representing Natural Objects on a Plane, by the help of a Ruler and Compasses, in like manner as they appear to the Sight under any Situation or Position.

X.

Drawing.

Which performs like Operations as Perspective, by Observation, and the Power of Imitation; join'd with an Habit of the Hand, acquired by Care, and Exercise, and is perform'd for the most part, without Ruler and Compasses.

XI.

Trigonometry Elementary and Practical,

Or the Doctrine of Triangles, Right-lined and Spherical : With the Construction

tion and Use of the Tables of Sines, Tangents, and Secants, Natural and Logarithmical; and of divers Useful Instruments Constructed from these Tables. Being the Art of Measuring Triangles with regard to their Sides and Angles only. Being a part of Mathematical Learning so Useful and Necessary, that without it Practical Geometry, Astronomy, Dialing, Geography, Fortification; the Direction and Knowledge of a Ship's Way in the Sea, with divers other Disciplines, Mathematical and Nautical, can in no wise be competently understood.

XII.

Practical Geometry.

Taking Heights, and Distances, by the help of Instruments and Tables; And finding the Contents of Superficies, and Solid Bodies.

XIII.

Use of Globes, Sphaeres, &c.

The Use of Globes Cœlestial and Terrestrial; of Sphaeres, Quadrants, Sectors, Scales, and other Mathematical Instruments

The Scheme.

59

struments relating to the Sea, and in frequent Use with Navigators.

XIV.

*Mapps, and Sea-Charts,
Draughts of Harbors, &c.*

The Projection of the Sphære in *Plano*, the Delineation and Use of Mapps, Sea-Charts, Draughts of Harbors, Roads, Bays, &c.

XV.

Astronomy.

That is, so much thereof as pertains to the Situations, Orders, Motions, Magnitudes, Distances; with other Accidents, and Phenomena, Relating to the Sun, Moon. and Fixed Stars.

XVI.

Chronography,

Or the Doctrine of Times. So far at least, as the Knowledge thereof Relates to Time, Consider'd as it is the Mea-

Measure of the Duration of Things, taken from the Motions of Cœlestial Bodies. The Political Distribution of Time into Years, Months, Weeks, Days, &c. and of their several Kinds, according to the Usage and Customs of Divers Countryes.

XVII.

Calendars:

The Explication, Construction, and Use of Calendars, Antient and Modern; *Julian* and *Gregorian*, &c. Whereto may be added, The Principles upon which the most useful and proper *Automata*, or Self-Movers, are Fabricated. As *Watches Pendulums*, *Clepsydra*, with other Measures of Time and Motion.

XVIII.

Geography.

A Science Teaching the Constitution, Division, Description, Dimension, Representation, and other Affections of the
Terra-

Terraqueous Globe : As Figure, Place, and Magnitude; Continents, Regions, Kingdoms, Provinces, Islands, Cherfonesus's, and Isthmus's; Mountains, Promontarys; Seas, Rivers, Lakes; Zones, Climates, Parallels, &c. into which it is divided; With divers other Matters unto each respectively pertaining.

XIX.

Architecture, Civil, and Naval.

The Art of Building Well: That is, with respect to Duration, Regularity, and Commodiousness. This consists very much in assigning to each Member of an *Ædifice*, a Just Proportion and Bigness, together with a proper Disposition or Placing all the Parts thereof according to their Uses, and Appointments. And these Qualifications are nowhere more needful to be understood and heeded, than in Building Ships of War: Because in them, The Men, Provisions, Stores, Good Properties for Fighting, Working in a Storm, &c. shou'd rather Find, than Seek Accommodation.

XX.

XX.

Promiscuous Naval Learning:

The Art of Gunnery. General Sea-Laws and Customs Relating to War, or Commerce. The Original, and Natural History of Winds and Tides. Proper Instructions for Reading Voyages and Travels, and for making Useful Inquiries and Remarks by such as go Abroad. Fair Writing, Short-Hand; and whatever else may really Advance the Art of Navigation.

And to the End this New Method of Education, may be Truly Liberal, and of Real Use and Benefit: It is further propos'd, That the aforesaid Arts and Sciences, shall be Taught in all the under-mention'd Languages; which are the Chief of Those, wherein the Sciences Themselves are generally Treated of, as They are also the Languages of Nations (except Latin, which is common unto All) among whom the Greatest Part of Naval Commerce, both for War, and Traffic, is Maintain'd.

The

The Languages are These, Viz.

- | | | |
|-------------|---|----------------|
| 1. Latin. | } | 4. Spanish. |
| 2. French. | | 5. Portuguese. |
| 3. Italian. | | 6. Dutch. |

Nil habet Fortuna Magna Majus, nec Natura Bona Melius, quam ut velit Benefacere quam Plurimis. Cic.

F I N I S.

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The following are the names of the persons who have been appointed to the various committees of the Board of Directors:

1. Linn. }
2. Linn. }
3. Linn. }

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